Mumps
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Overview[1,2]

For a more complete description of Mumps, refer to the following texts:

- Control of Communicable Diseases Manual (CCDM), Mumps section.
- Red Book, Report of the Committee on Infectious Diseases.

Case Definition[3]

Clinical description

An illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting greater than or equal to 2 days, and without other apparent cause.

Laboratory criteria for diagnosis

- Isolation of mumps virus from clinical specimen
- Significant rise in mumps antibody level by any standard serologic assay
- Positive serologic test for mumps IgM antibody.

Case classification

***Confirmed*:** a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a confined or probably case. A laboratory-confirmed case does not have to meet the clinical case definition.

Probable: meets the clinical case definition, has no or noncontributory serologic or virologic testing, and is not epidemiologically linked to a confirmed or probable case.

Comment

Two probable cases that are epidemiologically linked would be considered confirmed, even in the absence of laboratory confirmation.

Information Needed for Investigation

Verify clinical diagnosis. What laboratory tests were conducted? What were the results? What are the patient's clinical symptoms?

Establish the extent of illness. Determine if household or other close contacts are, or have been, ill by contacting the health care provider, patient or family member.

Contact the Regional Communicable Disease Coordinator if an outbreak is suspected, or if cases are in high-risk settings such as childcare, health care, or unvaccinated child populations.

Contact the Bureau of Child Care, if cases are associated with a childcare facility.

Case Contact Follow Up and Control Measures

Determine the source of infection.

- Identify household and childcare contacts.
- Obtain demographic information and vaccination status on all cases.
- Children should be excluded from school / childcare for 9 days from onset of parotid gland swelling.
- Pupils who continue to be exempted from mumps immunization because of medical, religious, or other reasons should be excluded until at least 26 days after the onset of parotitis in the last person with mumps in the affected establishment.

Control Measures

See the Mumps section of the Epidemiology and Prevention of Vaccine-Preventable Diseases 7th ed. Centers for Disease Control and Prevention 2002.
See the Mumps section of the 2000 Red Book.

ACIP-Recommended Measles, Mump Rubella Routine Vaccination Schedule[5]

Vaccine	12-18 Months	4-6 Years	11-12 Years
MMR	Dose 1	Dose 2	Dose 2

Measles, mumps and rubella vaccine (MMR). The second dose of MMR is recommended routinely at age 4-6 years, but may be administered during any visit, provided at least 4 weeks have elapsed since the first dose and both doses are administered beginning at or after age 12 months. Those who have not previously received the second dose should have it by the 11-12 year old visit.

Reporting Requirements

Mumps is a Category II disease and should be reported to the local health authority or to the DHSS within three days of knowledge or suspicion by telephone or facsimile.

1. For probable and confirmed cases, complete a Disease Case Report (CD-1) and a Mumps Report (IMMP-43).
2. Entry of the CD-1 into MOHSIS negates the need for the paper CD-1 to be forwarded to a Regional Health Office.
3. Send the completed secondary investigation form to the Regional Health Office.

4. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
5. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

References

1. Chin, James ed. "Mumps" Control of Communicable Diseases Manual, 17th ed. Washington, D.C.: American Public Health Association, 2000: 353-355.
2. American Academy of Pediatrics. "Mumps". In: Pickering, LK, ed. 2000 Red Book: Report of the Committee on Infectious Diseases. 25th ed. Elk Grove Village, IL. 2000: 405-408.
3. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997:46 (No.RR-10): 39.
4. "Mumps" Epidemiology and Prevention of Vaccine-Preventable Diseases 7th ed. Centers for Disease Control and Prevention 2002. Pages 115-122.
5. ACIP. Supplementary chart: Recommended Childhood Immunization Schedule, United States, January-December 2003. Approved by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFPW)

Other Sources of Information

1. Donowitz, Infection Control in the Child Care Center and Preschool, 4th Edition, 1999: pages 196-199.

Mumps

FACT SHEET

What is Mumps?

Mumps is an acute viral disease characterized by fever, swelling and tenderness of one or more of the salivary glands.

Who gets Mumps?

Although older people may contract the disease, mumps usually occurs in children between the ages of five and 15. Mumps occurs less regularly than other common childhood communicable diseases. The greatest risk of infection occurs among older children. Mumps is more common during winter and spring.

How is Mumps spread?

Mumps is transmitted by direct contact with saliva and discharge from the nose and throat of infected individuals.

What are the symptoms of Mumps?

Symptoms of mumps include fever, swelling and tendernderness of one or more of the salivary glands, usually the parotid gland (located just below the front of the ear). Approximately one-third of infected people do not exhibit symptoms.

How soon after do symptoms appear?

The incubation period is usually 16 to 18 days, although it may vary from 12 to 25 days.

When and for how long is a person able to spread mumps?

Mumps is contagious three days prior to and four days after the onset of symptoms.

Does past infection with mumps make a person immune?

Yes. Immunity acquired after contracting the disease is usually permanent.

Is there a vaccine for mumps?

Yes, mumps vaccine is given on or after a child's first birthday, and is usually administered in combination with measles and rubella vaccine. The vaccine is highly effective and one injection usually produces lifelong protection.

What complications have been associated with mumps?

Swelling of the testicles occurs in 15-25 percent of infected males. Mumps can cause central nervous system disorders such as encephalitis (inflammation of the brain) and meningitis (inflammation of the covering of the brain and spinal column). Other complications include arthritis, kidney involvement, inflammation of the thyroid gland and breast and deafness.

What can be done to prevent the spread of mumps?

The single most effective control measure is maintaining the highest possible level of immunization in the community.

Missouri Department of Health and Senior Services
Section for Communicable Disease Prevention
Phone: (866) 628-9891 or (573) 751-6113

Dosage Recommendation Guidelines for Mumps

Refer to the Advisory Committee on Immunization Practice (ACIP) for the recommended childhood vaccination schedule, which is published each January. Recommendations for vaccinations of adolescents and adults are revised less frequently and are published annually. Physicians and other health care providers should always ensure that they are following the most current schedules available from CDC's National Immunization Program website http://www.cdc.gov/nip. .

Children: Children should receive two doses of mumps containing vaccine, usually given as MMR, separated by at least 4 weeks. The first dose of MMR should be given on or after the first birthday. Mumps-containing vaccine given more than four days before 12 months of age should not be counted as part of the series. Children vaccinated too early should be revaccinated. The second dose of MMR vaccine should routinely be given by age 4-6 years, before a child enters kindergarten or first grade.

Adults: Adults born in1957 or later with no medical contraindications should receive at least one dose of MMR vaccine unless they have documentation of vaccination with at least one dose of measles-rubella-and mumps containing vaccine or other acceptable evidence of immunity to these three diseases.

Route & Site: Subcutaneous (SC) region. SC injections are administered into the fatty tissue found below the dermis and the above muscle tissue. The usual SC sites for vaccine administration are the thigh and the upper outer triceps of the arm. The buttock should never be used to administer vaccines.

Documentation Requirement: Federal law requires that the following information be documented in the recipients' permanent medical record or in a permanent office log:

(1)The manufacturer and lot number of the vaccine;
(2) The date of its administration
(3) The name, address, and title of the person administering the vaccine.

Certain adverse events must be reported to the VAERS system @ (800) 822-7967 or http://www.vaers.com

Important Information About Mumps
For Prevention of Mumps

Contraindications and Precautions:

- Serious allergic reaction to prior dose or vaccine component..
- Pregnancy
- Immunosuppression
- Moderate or severe acute illness
- Recent blood product

Important Facts:

- Person who have experienced a severe allergic reaction (i.e., hives, swelling of the mouth or throat, difficulty breathing, hypertension, shock) following a prior dose of mumps vaccine or to a vaccine component (e.g., gelatin, neomycin), should generally not be vaccinated with MMR

Adverse Reactions:

- Allergic reactions, including rash, pruritus, and purpura have been temporally associated with vaccination, but are transient and generally mild.
- No serious adverse events have been associated with use.
- If any symptoms occur, please contact your physician.

MEASLES MUMPS & RUBELLA VACCINES

WHAT YOU NEED TO KNOW

1 Why get vaccinated?

Measles, mumps, and rubella are serious diseases.

Measles
- Measles virus causes rash, cough, runny nose, eye irritation, and fever.
- It can lead to ear infection, pneumonia, seizures (jerking and staring), brain damage, and death.

Mumps
- Mumps virus causes fever, headache, and swollen glands.
- It can lead to deafness, meningitis (infection of the brain and spinal cord covering), painful swelling of the testicles or ovaries, and, rarely, death.

Rubella (German Measles)
- Rubella virus causes rash, mild fever, and arthritis (mostly in women).
- If a woman gets rubella while she is pregnant, she could have a miscarriage or her baby could be born with serious birth defects.

You or your child could catch these diseases by being around someone who has them. They spread from person to person through the air.

Measles, mumps, and rubella (MMR) vaccine can prevent these diseases.

Most children who get their MMR shots will not get these diseases. Many more children would get them if we stopped vaccinating.

2 Who should get MMR vaccine and when?

Children should get 2 doses of MMR vaccine:

✓ The first at **12-15 months of age**
✓ and the second at **4-6 years of age**.

These are the recommended ages. But children can get the second dose at any age, as long as it is at least 28 days after the first dose.

Some **adults** should also get MMR vaccine: Generally, anyone 18 years of age or older, who was born after 1956, should get at least one dose of MMR vaccine, unless they can show that they have had either the vaccines or the diseases.

Ask your doctor or nurse for more information.

MMR vaccine may be given at the same time as other vaccines.

3 Some people should not get MMR vaccine or should wait

- People should not get MMR vaccine who have ever had a life-threatening allergic reaction to **gelatin**, the antibiotic **neomycin**, or **a previous dose of MMR vaccine**.

- People who are moderately or severely ill at the time the shot is scheduled should usually wait until they recover before getting MMR vaccine.

- Pregnant women should wait to get MMR vaccine until after they have given birth. Women should avoid getting pregnant for 4 weeks after getting MMR vaccine.

- Some people should check with their doctor about whether they should get MMR vaccine, including anyone who:
  - Has HIV/AIDS, or another disease that affects the immune system
  - Is being treated with drugs that affect the immune system, such as steroids, for 2 weeks or longer.
  - Has any kind of cancer
  - Is taking cancer treatment with x-rays or drugs
  - Has ever had a low platelet count (a blood disorder)

Over . . .

- People who recently had a transfusion or were given other blood products should ask their doctor when they may get MMR vaccine

Ask your doctor or nurse for more information.

4 What are the risks from MMR vaccine?

A vaccine, like any medicine, is capable of causing serious problems, such as severe allergic reactions. The risk of MMR vaccine causing serious harm, or death, is extremely small.

Getting MMR vaccine is much safer than getting any of these three diseases.

Most people who get MMR vaccine do not have any problems with it.

Mild Problems

- Fever (up to 1 person out of 6)
- Mild rash (about 1 person out of 20)
- Swelling of glands in the cheeks or neck (rare)

If these problems occur, it is usually within 7-12 days after the shot. They occur less often after the second dose.

Moderate Problems

- Seizure (jerking or staring) caused by fever (about 1 out of 3,000 doses)
- Temporary pain and stiffness in the joints, mostly in teenage or adult women (up to 1 out of 4)
- Temporary low platelet count, which can cause a bleeding disorder (about 1 out of 30,000 doses)

Severe Problems (Very Rare)

- Serious allergic reaction (less than 1 out of a million doses)
- Several other severe problems have been known to occur after a child gets MMR vaccine. But this happens so rarely, experts cannot be sure whether they are caused by the vaccine or not. These include:
  - Deafness
  - Long-term seizures, coma, or lowered consciousness
  - Permanent brain damage

5 What if there is a moderate or severe reaction?

What should I look for?

Any unusual conditions, such as a serious allergic reaction, high fever or behavior changes. Signs of a serious allergic reaction include difficulty breathing, hoarseness or wheezing, hives, paleness, weakness, a fast heart beat or dizziness within a few minutes to a few hours after the shot. A high fever or seizure, if it occurs, would happen 1 or 2 weeks after the shot.

What should I do?

- Call a doctor, or get the person to a doctor right away.
- Tell your doctor what happened, the date and time it happened, and when the vaccination was given.
- Ask your doctor, nurse, or health department to file a Vaccine Adverse Event Reporting System (VAERS) form. Or call VAERS yourself at **1-800-822-7967** or visit their website at http://www.vaers.org

6 The National Vaccine Injury Compensation Program

In the rare event that you or your child has a serious reaction to a vaccine, a federal program has been created to help you pay for the care of those who have been harmed.

For details about the National Vaccine Injury Compensation Program, call **1-800-338-2382** or visit the program's website at http://www.hrsa.gov/osp/vicp

7 How can I learn more?

- Ask your doctor or nurse. They can give you the vaccine package insert or suggest other sources of information.
- Call your local or state health department's immunization program.
- Contact the Centers for Disease Control and Prevention (CDC):
  - Call **1-800-232-2522** (English)
  - Call **1-800-232-0233** (Español)
  - Visit the National Immunization Program's website at http://www.cdc.gov/nip

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Disease Control and Prevention
National Immunization Program

Vaccine Information Statement
MMR (1/15/03) 42 U.S.C. § 300aa-26

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
OFFICE OF SURVEILLANCE

MUMPS REPORT

CASE NO.

PATIENT	NAME (LAST, FIRST, M.I.)			COUNTY
	ADDRESS	CITY	STATE	ZIP CODE
Reporting Physician Nurse/Hosp/ Clinic	NAME			
	ADDRESS	CITY		ZIP CODE

DEMOGRAPHICS

BIRTHDATE (MONTH/DAY/YEAR)

SEX
☐ M - MALE ☐ F - FEMALE ☐ U - UNKNOWN

RACE
☐ N - NATIVE AMER./ALASKAN NATIVE ☐ W - WHITE
☐ A - ASIAN/PACIFIC ISLANDER ☐ O - OTHER
☐ B - AFRICAN AMERICAN ☐ U - UNKNOWN

ETHNICITY
☐ H - HISPANIC
☐ N - NOT HISPANIC
☐ U - UNKNOWN

CLINICAL DATA

EVENT DATE (MONTH/DAY/ YEAR)

COMMENTS CONFIRMED (OTHER DATA)
☐ PROBABLE
☐ SUSPECTED
☐ UNKNOWN

PAROTITIS
☐ YES
☐ NO
☐ UNKNOWN

IMPORTED
☐ 1 - INDIGENOUS (ACQUIRED IN USA REPORTING STATE)
☐ 2 - INTERNATIONAL (ACQUIRED OUTSIDE USA)
☐ 3 - OUT OF STATE (ACQUIRED IN USA OUTSIDE REPORTING STATE)
☐ 9 - UNKNOWN

COMPLICATIONS

	YES	NO	UNKNOWN		YES	NO	UNKNOWN
Meningitis	☐	☐	☐	Deafness	☐	☐	☐
Encephalitis	☐	☐	☐	Orchitis	☐	☐	☐
Death	☐	☐	☐	Other Complication	☐	☐	☐
Hospitalized due to mumps	☐	☐	☐	If other complication, specify _____			

Total Days Hospitalized _____

LABORATORY

WAS TESTING FOR MUMPS DONE
☐ YES ☐ NO ☐ UNKNOWN

DATE IgM SPECIMEN TAKEN
MONTH DAY YEAR

IgM RESULT
☐ P - POSITIVE ☐ N - NEGATIVE ☐ I - INDETERMINANT
☐ E - PENDING ☐ X - NOT DONE ☐ U - UNKNOWN

DATE IgG ACUTE SPECIMEN TAKEN
MONTH DAY YEAR

IgG RESULT
☐ P - SIGNIFICANT RISE IN IgG ☐ I - INDETERMINANT ☐ X - NOT DONE
☐ N - NO SIGNIFICANT RISE IN IgG ☐ E - PENDING ☐ U - UNKNOWN

DATE IgG CONVALESCENT SPECIMEN TAKEN
MONTH DAY YEAR

IgG RESULT
☐ P - SIGNIFICANT RISE IN IgG ☐ I - INDETERMINANT ☐ X - NOT DONE
☐ N - NO SIGNIFICANT RISE IN IgG ☐ E - PENDING ☐ U - UNKNOWN

SPECIFY OTHER LABORATORY METHODS AND RESULTS

OTHER RESULTS
☐ P - POSITIVE ☐ N - NEGATIVE ☐ I - INDETERMINANT
☐ E - PENDING ☐ X - NOT DONE ☐ U - UNKNOWN

VACCINE HISTORY

HAD CASE EVER RECEIVED MUMPS-CONTAINING VACCINE
☐ YES ☐ NO ☐ UNKNOWN

NUMBER OF DOSES RECEIVED ON OR AFTER 1ST BIRTHDAY

VACCINATION DATE
MONTH DAY YEAR

1.
2.
3.
4.

IF CASE NOT VACCINATED, WHAT WAS THE REASON
☐ 1 - RELIGIOUS EXEMPTION
☐ 2 - MEDICAL CONTRAINDICATION
☐ 3 - PHILOSOPHICAL OBJECTION
☐ 4 - LABORATORY EVIDENCE OF PREVIOUS DISEASE
☐ 5 - DOCTOR DIAGNOSIS OF PREVIOUS DISEASE
☐ 6 - UNDER AGE FOR VACCINATION
☐ 7 - PARENTAL REFUSAL
☐ 8 - OTHER
☐ 9 - UNKNOWN

EPIDEMIOLOGIC INFORMATION

TRANSMISSION SETTING (WHERE DID THIS CASE ACQUIRE MUMPS?)

- ☐ 1 - DAY CARE
- ☐ 2 - SCHOOL
- ☐ 3 - DOCTOR'S OFFICE
- ☐ 4 - HOSPITAL WARD
- ☐ 5 - HOSPITAL ER
- ☐ 6 - HOSPITAL OUTPATIENT CLINIC
- ☐ 7 - HOME
- ☐ 8 - WORK
- ☐ 9 - UNKNOWN
- ☐ 10 - COLLEGE
- ☐ 11 - MILITARY
- ☐ 12 - CORRECTIONAL FACILITY
- ☐ 13 - CHURCH
- ☐ 14 - INTERNATIONAL TRAVEL
- ☐ 15 - OTHER

IF TRANSMISSION SETTING NOT AMONG THOSE LISTED AND KNOWN, WHAT WAS TRANSMISSION SETTING?

WERE AGE AND SETTING VERIFIED
☐ YES ☐ NO ☐ UNKNOWN

OUTBREAK RELATED
☐ YES ☐ NO ☐ UNKNOWN

IF YES, OUTBREAK NAME (NAME OF OUTBREAK THIS CASE IS ASSOCIATED WITH)

SOURCE OF EXPOSURE FOR CURRENT CASE

EPI-LINKED TO ANOTHER CONFIRMED OR PROBABLE CASE
☐ YES ☐ NO ☐ UNKNOWN

CONTACTS (HOUSEHOLD AND OTHER)

NAME, ADDRESS AND PHONE	AGE	SEX	RELATION TO PATIENT	SIMILAR ILLNESS? ONSET DATE	DATE LABORATORY SPECIMEN COLLECTED	LABORATORY RESULTS

NOTES

Outbreak (Mumps) — Cases (with at least one laboratory confirmed case) clustered in space and time.

Source of exposure — A source case must be either a confirmed or probable case and have had face to face contact with a subsequent generation case. Exposure must have occurred 7 to 18 days before onset of the new case, and between 4 days before onset and 7 days after the source case.

Epi-linked — An epi-linked case is either a source case or same generation case. Epi-linkage is characterized by direct face to face contact. For same generation cases that are epi-linked, a common exposure is likely.

DATE CASE FIRST REPORTED TO STATE	FORM COMPLETED BY	TELEPHONE	DATE FORM COMPLETED
MONTH DAY YEAR		( )	MONTH DAY YEAR